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Physical Characteristics

144 563 Anthropometric measurements made on 230 living adults have been forwarded to Dr. Harry L. Shapiro for analysis. About 25 individuals measured were of mixed blood; the remainder were full-blooded Pukapukans, an equal number of males and females. The amount of racial or of early interisland mixture is not great. Two Manihikian women, castaways, married and settled down on the island about 10 generations ago. Recent intermixture with whites is readily observed. There is no discrimination against or in favor of those of mixed blood. The average stature of Pukapukan men and women 142 is noticeably less than that observed for other Polynesian groups. Women are shorter than men. The presence of the epicanthic fold was noted in several individuals. The glabella is more prominent in men than in women. Face type seems to vary between a narrow, long face with a long nose and a wide face with a short, broad nose. It is possible that analysis will reveal two physical types based on these distinctions. Lips in general are thin or medium thick. The hair is black; low and medium waves are common. Body hair is scanty on both sexes. Skin color is a light brown which becomes very dark on prolonged exposure to the sun. The skin color of infants is extremely fair.

Motor Habits

516 Little sex differentiation was observed in motor habits. The common position in sitting is "turkish fashion". The legs are crossed with knees bent and resting on the inside portion of the sole of the foot, the outside edges of the feet resting on the ground. A common variation is to raise the right foot and rest it on top of the left knee. This is the position for all sedentary activities, whether mat plaiting, food preparation, sennit making, or simple rest. Only a man braiding sennit sits with outstretched legs; he loops the free end of the sennit round the toe of an extended foot to obtain a tension on the cord.

481 [164] The bent-knee gait is common in walking. Apart from individual walking habits due to previous yaws infection of feet and legs, the common habit is to walk with the palms hanging at the side and turned inward, the toes pointing straight ahead. Running and jumping habits seem to be similar to those of the ordinary unskilled white person. Children crawl on hands and knees and on hands and feet.

513 192 Both sexes lie and sleep (*moe*) in a wide variety of positions, on the side, prone, or supine. The Pukapukan distinguishes by descriptive names more than thirty-five different types of sleep according to position, movements during sleep, and soundness of sleep. The amount of sleep for adults varies from 4 to 8 hours each night, sometimes with an hour or more of extra sleep during the day. Young children sleep whenever they are tired. Children

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857 Young children sleep whenever they are tired. Children
513 from about 6 years of age onward average about 8 hours of sleep each night. Fires are occasionally kept burning late into the night when mosquitoes are troublesome.

514 Men micturate in a standing position; women squat on the heels or stand with knees bent. Both sexes defecate in a position squatting on both heels.

412 Cutting habits vary according to the instrument employed. In general, a knife is moved away from the body, a native cutting or scraping instrument toward the body. Adzing is, of course, toward the body.

413 Heavy weights, such as canoes, are lifted from the ground with the arms in front of the body and carried just clear of the ground. A house roof is carried on the shoulders of a number of men who get inside the roof while it is on the ground and hoist it onto their shoulders. A few coconuts are
482 carried in the hands, with or without a basket; a large number are balanced on the shoulder. Many coconuts are carried on a rough carrying pole, weighted at both ends and balanced at its middle point on the shoulder. The right shoulder is generally preferred. Women generally carry weights balanced on the head, using a pad made of a bunch of leaves placed between the head and the burden.

481 Climbing coconut trees and coconut husking are described on page 86.
515 Swimming is naturally acquired behavior and is not taught to children. Pukapukans are not great swimmers or divers, but use the sea mostly for bathing,
526 when they run or wade from the beach and then suddenly duck. Children
527 are in the water a great deal; they play at water splashing, surface diving, and underwater swimming games. Adults rarely play swimming games. In diving for *Tridacna* shellfish, adults dive from the surface by elevating the buttocks and depressing the head.

516 Casual observation indicates that left-handedness (*lima maui*) is common in both children and adults. This was observed in adults in the use of implements and in the handling of darts in games, in children when dancing.

The toes are used extensively for picking up objects from the ground and for holding objects when both hands are engaged and when purchase is required.

581 Both men and women pole and paddle canoes today. The individual poles a canoe sitting, standing on the floor of the canoe, or standing with one foot on each gunwale. Paddling is done on either side of the canoe with equal ease. The paddle is grasped with both hands, fingers pointing to the front, thumbs to the rear. It is unusual for a canoe crew to sing or chant in rhythm
[461] to the paddling. The paddle is plunged vertically into the water and the stroke is fore and aft. Two types of strokes are used: *alo atu pole* is a long, even, powerful stroke with the full stretch and strength of arms and shoulders, dipping the paddle blade deep into the water, and used for long distances when consistent power is required; *alo tauinga* is a short, quick, shallow stroke,

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according to the quality of *takutaku* desired. An excellent food reserve against hard times, households formerly had one of several houses stored exclusively with *takutaku* nuts.

The various parts of the coconut are named as follows:

Mata: eyes of the nut.
Mulimuli: base of nut opposite eyes.
Pulu: husk.
Pulu kawa: husk fibers.
Kiko: endosperm when soft.
Ipiipi: endosperm when hard.
Ngaipu, plural ua ngaipu: endocarp (shell).
Uto: absorbing organ.
Yua: coconut liquid.
Kanava: fatty deposit on surface of flesh of yakali nut.
Tuatua: brown sheath separating flesh from shell in yakali nut.
Uto wai kawa: unhusked nut at uto stage.
Uto: husked nut at uto stage.
Kili uto: sheath between hard endosperm and absorbing organ.
Mata uto: sprouting stem, radicle and roots together.

Harvesting

The three articles used in harvesting and husking coconuts—climbing bandage, husking stick, and carrying pole—are all described elsewhere (pp. 123, 146).

In coconut-tree climbing, the right arm is passed around the trunk of the tree and holds the body close to the trunk. The flexed left arm grips the near surface of the trunk and is used to lever the body as the climber progresses up the tree with a series of short springs. Alternatively, both arms are passed around the trunk of the tree, but the former method is preferred where speed is desired.

Throwing nuts down from the tree is termed *maka te niu ki lalo, totoli te niu ki lalo,* or *takavili te niu.* Nuts are usually harvested by young boys, occasionally by girls. The nut is grasped with the hand from below and twisted off the stem. As the nut is released, the hand is given a rotary twist (*kui*) so that the nut spins around as it falls and drops in a vertical line. It hits the ground on the base of the nut and does not split open with the impact. The spin also prevents the nut from rolling when it hits the ground and so becoming lost in the undergrowth.

Whenever a special gift of nuts is to be made, the nuts are lowered in a cluster from the tree, so that none will be bruised. They are given to the recipient unhusked. Besides receiving a gift with this special mark of status, the recipient receives also the edible husk of the nut.

From 20 to 40 nuts are usually harvested at one time. The husking stick (*koyo*) is next set up.

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372 possible to transfer fire from one cook house to another. It is a common sight in any village to see children and adults carrying fire from one cook house to another in order to start a fresh blaze.

To procure fire, one end of a coconut spathe (*tauma*) is placed in a burning fire until it ignites. As it is carried away, it is moved gently in the air to keep it flaming. To transfer fire from smouldering cinders or ashes another technique is used: a coconut spathe is held with the tip toward the body, and the butt end is folded back on itself about 12 inches from the end; a section of the spathe at the fold is shredded with the fingers; cinders or smouldering wood are picked up in the fold and carried back thus to the cook house, or else the cinders are blown upon and the shredded spathe ignited. This method is used regularly for starting fire with a match.

Ovens

343 Kitchens (*uale imu*) are small houses set back from the dwelling houses. In the villages they are permanent structures, well built, of the *uale wakayamoa* type (p. 111). In the copra settlements they are smaller, of rougher build, and, in the main, of the *uale toinuku* style (p. 109). The kitchen shelters the oven (*imu*) which is situated at one end, often under a lean-to shelter, so that the prevailing winds blow the smoke away from the cooks.

The oven ground is excavated to form a sunken space about 4 feet square and 18 inches deep. The edges are lined with logs to prevent the sand from falling in. The bottom is filled with oven stones (*vatu imu*), blocks of coral conglomerate (*kaupapa*), or, when available, imported volcanic stones (*kala*). Because the coral does not last long under heat and must be frequently renewed, *kala* stones are highly valued. *Tridacna* shells are not used as heating material.

To build the oven (*pu te imu*), coconut shells (*agaipu*) are piled on the floor of the oven, dry coconut husks (*pihipihi*) are stood around them, and the oven stones are piled on and around the sides of the husks. The shells are lighted by a burning coconut sheath inserted under them. When the fuel has burned out (*hoa matemate te imu*), the hot stones are pushed aside (*tolo te imu*) with the butt of a coconut midrib (for this purpose called *tao*). Bits of burning wood and charcoal are thrown away. So as not to burn the food a few cold coral pebbles are sprinkled on the hot ground, and the floor of the oven is covered with *puapua* leaves (*lautaloa*). Food packets covered with leaves are placed on the *lautaloa*. The hot oven stones are piled on top of the food packets and covered with flat bundles of *puapua* leaves tied with coconut leaflet midribs. Green coconut husks are carefully arranged on top of the leaves so as to cover them entirely. The whole is covered again with several layers of *polapola* coconut-leaf mats arranged so there are no cracks through which heat may escape. Today old copra sacks form a convenient and valued substitute for *polapola*. The whole oven covering is termed *tutao*; to cover the oven is *uvi te imu* or *tui te tutao*. Whenever a woman comes back from the talo beds, she places a bundle of *puapua* leaves on her head to serve as a pad to cushion the weight of the basket of talo and tucks more leaves into the top of the basket to keep the talo from falling out. The leaves thus brought back to the cook house are preserved for use as oven covers.

Cooking

252 Cooking is done by women. On certain rare occasions a man may 252 prepare food without disgrace: when in a group of men alone on the reserve